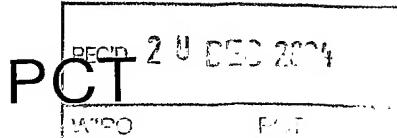


PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220



WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/GB2004/004144

International filing date (day/month/year)
29.09.2004

Priority date (day/month/year)
29.09.2003

International Patent Classification (IPC) or both national classification and IPC
B32B27/10, B32B29/00, B32B23/08, B32B27/08, B65D81/00, C09D167/04, D21H19/28

Applicant
MARS, INCORPORATED

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 a sequence listing
 table(s) related to the sequence listing
 - b. format of material:
 in written format
 in computer readable form
 - c. time of filing/furnishing:
 contained in the international application as filed.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority for the purposes of search.
3. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. The following document has not been furnished:

copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
 translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or
industrial applicability; citations and explanations supporting such statement**

1. Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 7-13 |
| | No: Claims | 1-6 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1-13 |
| Industrial applicability (IA) | Yes: Claims | 1-13 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents cited in the International Search Report (ISR), especially to the passages mentioned therein:

- D1: WO 00/05068 A (KARHUKETO HANNU ; KORPELA HEIKKI (FI); UPM KYMMENE CORP (FI)) 3 February 2000 (2000-02-03)
- D2: US-A-6 153 276 (OYA SATOSHI ET AL) 28 November 2000 (2000-11-28)
- D3: US-B-6 183 8141 (KOLSTAD JEFFREY J ET AL) 6 February 2001 (2001-02-06)
- D4: WO 97/11845 A (CARGILL INC) 3 April 1997 (1997-04-03)
- D5: EP-A-0 179 641 (MARS G B LTD) 30 April 1986 (1986-04-30)
- D6: EP-A-0 514 137 (MITSUI TOATSU CHEMICALS) 19 November 1992 (1992-11-19)

1 Novelty (Art. 33(2) PCT)

1.1 Document D1 is considered relevant for the novelty of the present claims 1-6. D1 claims a lid structure for a food packaging container, which structure comprises a paper-based body layer (1) and, on the side that is against the packaging container, plastic layers that function as a barrier and as heat-sealable layers, wherein the plastic layers (2 ; 2a, 2b, 2c, 2d) that are attached to the body layer (1) are one or more layers of biodegradable plastic, such as of polylactide and/or polyhydroxy alkanoate, and the outermost layer (3) is formed of biodegradable ester copolymer. Layer (3) is sealed to the edge P1 of the packaging container P (Figs 1,2; p. 2, l. 46-p. 3, l. 24). The lid L can be sealed onto the packaging container by **heat-sealing** the layer 3 onto the edge P1 by means of temperature and pressure. A reasonable conclusion may hence be drawn, that since layer (3) is the heat-sealable layer, it will have a lower sealing temperature than layers (2; 2a-2d) underneath layer (3), otherwise layers (2; 2a-2d) would soften or melt during the sealing process. A lower sealing temperature implies that layer (3) has a lower "heat-sealing initiation temperature", whereby the "heat-sealing initiation temperature" is defined in present application on p. 3, l. 13-5 and is depicted in present Fig 3.

1.2 Document D2 is considered relevant for the novelty of the present claims 1-6. D2, which is acknowledged as prior art on p. 2, claims a heat-sealable lactic-acid based polymer laminate comprising a base layer (I) made of a crystallized lactic acid-based polymer (A) which has a melting point of at least 120°C, and a heat-sealing layer (II) made of an amorphous lactic acid-based polymer (B) which has a softening point of from 40 to 110°C, wherein one face of said heat-sealing layer is laminated to one face of said base layer, and the other face of said heat-sealing layer constitutes an outer face of said laminate (claim 1). The laminate may further comprise a second heat-sealing layer (II) made of an amorphous lactic acid-based polymer (B) which has a softening point of from 40 to 110°C laminated to the other face of said base layer (claim 13). Hence the construction heat-sealing layer/ base layer/ second heat-sealing layer is disclosed in claim 13. One of the sealing layers being considered as a substrate, the laminate of claim 13 of D2 falls within the scope of present claims 1-6, since the base layer comprises the relatively crystalline polymer and the other sealing layer comprises the relatively amorphous polymer.

2 Inventive step (Art.33(3) PCT)

2.1 In the application as filed there is no formulation of a problem to be solved. Hence, in the absence of a meaningful technical problem, the following may be said preliminary as regards inventive step.

A compostable package and a method of manufacturing according to claims 7-13, wherein the package comprises "first and second regions of sealing between sheets of compostable material, said first region having a relatively high sealing strength, and said second region having a relatively low sealing strength" (claim 7), and whereby said different sealing strengths result in different peel strengths of the resulting seals (claim 11), appears to be novel over any one of documents D1-D6. D5 appears to comprise the feature of different seal strengths, for example the bottom seal 6 (Figs 1-3; p. 5, l. 3-31) is more fragile than the seal around the seams 4. The difference with the present application is the compostable sheet material absent in D5. However, such a compostable sheet material is disclosed in D1 or D2. Thus a combination of D5 with, e.g., D2 would deprive inventivity from present claims 7-13.

2.2 If, following proper amendments, novelty of claims 1-6 over D1 and D2 is eventually

established, the following is relevant for discussing inventive step of the sheet material or package. It is true (present p. 2, l. 26-29) that D2 does not disclose applying the laminate to a substrate. However, D3 discloses paper substrates sequentially coated with two layers of different polylactides. A combination of D2 with D3 would be relevant in discussing inventive step of a compostable sheet material comprising a paper substrate.

Re Item VIII

Certain observations on the international application

- 3 Clarity (Art. 6 PCT)
- 3.1 Claim 1 requires that the two sealable layers have different heat-sealing initiation temperatures. It is not defined, however, with respect to which layer is this sealing defined. The first sealable layer is sealed onto the substrate and onto the second sealable layer. The second sealable layer is sealed against the first sealable layer, and in practice against itself if the second sealable layer of a first web is sealed onto a second sealable layer of a second web in order to provide the seams. In the absence of such a "reference layer", the feature "heat-sealing initiation temperature" is meaningless. Furthermore, the data on Fig 3, relevant to this feature, are also meaningless.
- 3.2 Another point that needs an explanation has to do with the package of claim 7 and the process of claim 11. Does the application imply that the first sealable layer of a first sheet according to claim 1 is sealed onto the first sealable layer of a second sheet in the areas of high sealing strength? Does the application also imply that the second sealable layer of a first sheet according to claim 1 is sealed onto the second sealable layer of a second sheet in the areas of low sealing strength? In other words is the high sealing strength associated with the first sealable layer and the low sealing strength associated with the second sealable layer?
Please explain, because it appears that claim 1 on one side, and claims 7 and 11 on the other side, deal with two completely different aspects.

- 4 General
- 4.1 In order to facilitate the examination of the conformity of the amended application

with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.

- 4.2 Moreover, the applicant's attention is drawn to the fact that, as a consequence of Rule 66.8(a) PCT the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.
- 4.3 Any information the applicant may wish to submit concerning the subject-matter of the invention, for example further details of its advantages or of the problem it solves, and for which there is no basis in the application as filed, should be confined to the letter of reply and not be incorporated into the application (Article 34(2)(b) PCT).
- 4.4 Care should be taken to avoid introducing subject-matter which extends beyond the content of the application as filed, Article 19(2)/Article 34(2)(b) PCT.